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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,223	01/04/2007	Susumu Yamaguchi	4600-0121PUS1	8401
2292 7590 11/19/2010 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER MUKHOPADHYAY, BHASKAR	
			ART UNIT 1789	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/578,223	Applicant(s) YAMAGUCHI ET AL.	
	Examiner BHASKAR MUKHOPADHYAY	Art Unit 1789	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11 and 13-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11 and 13-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' amendment filed 9/03/2010 overcomes the rejections of record, however, the new grounds of rejection as set forth below are necessitated by applicants' amendment and therefore the following action is **final**.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 2, 4, 7, 9, 13, 14, and 15, are rejected under 35 U.S.C. 102(b) as being anticipated by Higashiyama et al., USPN 6117905, in view of the evidence given by Gilbertson, USPN 6,166,076.

4. Regarding claims 2, 3, 4, 7, 8, and 9, Higashiyama et al., disclose the use of arachidonic acid in foods like soup (col 6, line 38), meat (col 6 line 36), fried rice (col 8, line 40), mayonnaise (col 6, line 42), and processed soy curd (col 6, line 49) to meet the claimed elements in claims 2, 3, 4, 7, 8, and 9. It is also anticipated that the taste is

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enhanced to processed food products like meat, fish etc. which are the extracts. It is clear that the soy curd is a vegetable protein. It is also clear that mayonnaise is the egg food and thus meets claim 3. Evidence prior art by Gilbertson teaches about arachidonic acid stimulate taste receptor cells and enhance taste in the food additives (col 2, lines 55-60, col 5, Table 1) so that the taste of food is enhanced and sensed through neuro epithelial cells as chemoreceptors in the mouth (col 1, lines 10-15). It is well anticipated that this inherent phenomena is known as "body taste enhancement". Given that Higashiyama disclose adding long chain highly unsaturated fatty acid as presently claimed to processed egg food, fried rice, and vegetable protein as presently claimed, it is clear that such additions would inherently enhance the egg flavor, enhance the fried egg flavor, and inhibit proteinous odor, respectively.

5. Regarding claim 13, Higashiyama et al., teach about production of arachidonic acid from microorganism and used in various food compositions (Abstract). The motivation is to produce arachidonic acid from microorganisms because of inconvenience to produce from animal kingdoms (col 1, lines 57-60) and production from microorganisms with little unsaponifiable matters and the smallest possible amount of sterol with cyclopropane structure , being suitable for production of foods (col 2, lines 20-30).

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6. Regarding claims 14, and 15, Higashiyama et al., teach about heat-cooking the foods with the oils having arachidonic acid (col 6, lines 30-40) and cooking heat-cooking is selected from frying (col 6, lines 39 and 52).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1,148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

- a. Determining the scope and contents of the prior art.
- b. Ascertaining the differences between the prior art and the claims at issue.
- c. Resolving the level of ordinary skill in the pertinent art.
- d. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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9. Claims 1, 2, 4, 5, 6, 7, 9, 10, 11, 12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (EP 0 295 509 A1) in view of Gilbertson, USPN 6,166,076.

10. Regarding claims 1, 2, 4, 5, 7, 10, 11, and 12, Chen discloses the addition of long chain unsaturated fatty acids in the flavoring composition as seasoning composition (page 2, line 1) wherein the long chain unsaturated fatty acids are obtained from safflower, linseed oil etc. (pg 2, lines 15-25), when subjected to oxidation produce flavoring composition (pg 2, lines 5-10, e.g.' individual fatty acids or mixtures when subjected in the presence of oxygen') and flavors can be obtained which can be like meat, chicken, fish etc.(pg 3, line 10) and specific flavors e.g. meats, sauces, soup etc. (pg 3, lines 32-35) depending on the type of starting fatty acid material and temperature (pg 3, lines 9-13; and lines 30-35) e.g. 'oleic acid or a mixture of fatty acids containing oleic acid have a strong beef-like and linoleic acid have a strong roasted chicken like flavor (pg 2, lines 37-42). It is obvious that flavors can be made in the products like meats, chicken, fish etc. (page 3, line 10) and they are the extracts from them. It is also obvious that "curry roux" or Stew as claimed in claim 5, is a type of soup and one of ordinary skill in the art will enhance its taste using flavoring agents including fatty acids in the composition.

Chen, however, does not teach specific long chain highly unsaturated fatty acids e.g. arachidonic acid as taste enhancing food additives.

Gilbertson teaches about a method for making various foods with cis polyunsaturated fatty acids, known as PUFAs (col 7, line 43, e.g. cis poly unsaturated

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fatty acids or PUFAs) to stimulate taste receptors in the mouth (col 9, lines 10-15).

Gilbertson also teaches about fatty acids exhibiting these properties are those having at least two double bonds, at least one of which in cis configuration and polyunsaturated fatty acids including arachidonic acid, eicosapentaenoic acid, and docosahexaenoic acid (Abstract; Table 1) and the time for taste receptor cells to return to the "resting" state is longer following fatty acid stimulation than for other taste stimuli and so increases the taste receptor cells sensitivity to other stimuli (Abstract) , and thus meeting the claimed element "enhancing taste of seasoning".

Gilbertson also teaches that the mechanism hold good to enhance the taste of various foods (col 9, lines 11-13). The motivation is to include long chain highly unsaturated fatty acids e.g. arachidonic acid to stimulate taste receptor cells (TRCs) on the tongue by cis-polyunsaturated acids in the mouth (col 2, lines 55-60) so that the taste of food is enhanced and sensed through neuro epithelial cells as chemoreceptors in the mouth (col 1, lines 10-15). It is obvious that this phenomena is known as "body taste enhancement".

It would have been obvious to one of ordinary skill in the art at the time of invention to include the teaching of Gilbertson into Chen. One of ordinary skill in the art would have been motivated to include long chain highly unsaturated fatty acids e.g. arachidonic acid to stimulate taste receptor cells (TRCs) on the tongue by cis-polyunsaturated acids in the mouth so that the taste of food is enhanced and sensed through neuro epithelial cells as chemoreceptors in the mouth. It is obvious that this phenomenon is known as "body taste enhancement".

11. Regarding claims 6, and 9, Chen in view of Gilbertson teach about the flavoring composition with e.g. treated oleic acid, if added, to any plant protein, has excellent roast beef dripping character and if treated with linoleic acid instead, it will have roasted chicken or fish character (page 4, examples 1, and 2; and pg 2, lines 40-41 e.g. roasted chicken or fish). Thus “inhibiting proteinous odor” as claimed in claim 9. Further, a mechanism will hold well if one of ordinary skill in the art adds the acid of Chen in view of Gilbertson to any soup including Japanese soup, to impart respective beef dripping roasted chicken or fish (pg 2, lines 40-41) character, or any other soup flavor, which would obviously suppress the unwanted off flavor of heat browning odor in the product as claimed in claim 6.

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Remacle et al., USPN 7572475, in view of Gilbertson, USPN 6, 166,076.

13. Regarding claim 3, Remacle et al. teach about eggs in food composition (col 7, lines 59-63), having highly unsaturated n-3 or n-6 enriched egg including arachidonic acid (claims 5,8) and also characterized by advantageous organoleptic properties in terms of freshness and flavor (col 17, lines 13-15). Remacle et al. teach that this egg can be cooked (i.e. fried) maintaining the PUFAs profile in the egg (Table 15). It is obvious that the egg flavor can be enhanced with the addition of eggs in the food.

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Remacle et al. however, do not teach about adding long chain highly unsaturated fatty acids e.g. arachidonic acid as taste enhancing food additives in the composition.

Gilbertson teaches about a method for making various foods with cis polyunsaturated fatty acids, known as PUFAs (col 7, line 43, e.g. cis poly unsaturated fatty acids or PUFAs) to stimulate taste receptors in the mouth (col 9, lines 10-15). Gilbertson also teaches about fatty acids exhibiting these properties are those having at least two double bonds, at least one of which in cis configuration and polyunsaturated fatty acids including arachidonic acid, eicosapentaenoic acid, and docosahexaenoic acid (Abstract; Table 1) and the time for taste receptor cells to return to the "resting" state is longer following fatty acid stimulation than for other taste stimuli and so increases the taste receptor cells sensitivity to other stimuli (Abstract) , and thus meeting the claimed element "making taste of seasoning better".

Gilbertson also teaches that the mechanism holds good to enhance the taste of various foods (col 9, lines 11-13). The motivation is to include long chain highly unsaturated fatty acids e.g. arachidonic acid to stimulate taste receptor cells (TRCs) on the tongue by cis-polyunsaturated acids in the mouth (col 2, lines 55-60) so that the taste of food is enhanced and sensed through neuro epithelial cells as chemoreceptors in the mouth (col 1, lines 10-15). It is obvious that this phenomena is known as "body taste enhancement" with fried -egg flavor' as claimed in claim 8.

It would have been obvious to one of ordinary skill in the art at the time of invention to include the teaching of Gilbertson into Remacle et al. One of ordinary skill in

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the art would have been motivated to include long chain highly unsaturated fatty acids e.g. arachidonic acid to stimulate taste receptor cells (TRCs) on the tongue by cis-polyunsaturated acids in the mouth so that the taste of food is enhanced and sensed through neuro epithelial cells as chemoreceptors in the mouth, the phenomenon is known as "body taste enhancement".

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higashiyama et al., USPN 6117905 in view of Remacle et al., USPN 7572475, and Gilbertson, USPN 6, 166,076.

15. Regarding claim 8, Higashiyama et al., disclose the use of arachidonic acid in foods like fried rice (col 6, line 40).

Higashiyama et al., do not disclose about (a) fried-egg flavor and (b) enhancing the body taste and adding a long chain highly unsaturated fatty acid in the composition.

With respect to (a), Remacle et al. teach about eggs in food composition (col 7, lines 59-63), having highly unsaturated n-3 or n-6 enriched egg including arachidonic acid (claims 5,8) and also characterized by advantageous organoleptic properties in terms of freshness and flavor (col 17, lines 13-15). Remacle et al. teach that this egg can be cooked (i.e. fried) maintaining the PUFAs profile in the egg (Table 15). It is obvious that the egg flavor can be enhanced with the addition of eggs in the food. The motivation is to introduce organoleptic properties in terms of freshness and flavor (col 17, lines 14-21).

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With respect to (b), Gilbertson teaches about a method for making various foods with cis polyunsaturated fatty acids, known as PUFAs (col 7, line 43, e.g. cis polyunsaturated fatty acids or PUFAs) to stimulate taste receptors in the mouth (col 9, lines 10-15). Gilbertson also teaches about fatty acids exhibiting these properties are those having at least two double bonds, at least one of which in cis configuration and polyunsaturated fatty acids including arachidonic acid, eicosapentaenoic acid, and docosahexaenoic acid (Abstract; Table 1) and the time for taste receptor cells to return to the "resting" state is longer following fatty acid stimulation than for other taste stimuli and so increases the taste receptor cells sensitivity to other stimuli (Abstract) , and thus meeting the claimed element "making taste of seasoning better".

Gilbertson also teaches that the mechanism hold good to enhance the taste of various foods (col 9, lines 11-13). The motivation is to include long chain highly unsaturated fatty acids e.g. arachidonic acid to stimulate taste receptor cells (TRCs) on the tongue by cis-polyunsaturated acids in the mouth (col 2, lines 55-60) so that the taste of food is enhanced and sensed through neuro epithelial cells as chemoreceptors in the mouth (col 1, lines 10-15). It is obvious that this phenomena is known as "body taste enhancement" with fried -egg flavor' as claimed in claim 8. It would have been obvious to one of ordinary skill in the art at the time of invention to include the teaching of Gilbertson and Remacle et al. into Higashiyama et al., One of ordinary skill in the art would have been motivated to The motivation is to introduce organoleptic properties in terms of freshness and flavor(Remacle et al., col 17, lines 14-

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21) and to include long chain highly unsaturated fatty acids e.g. arachidonic acid to stimulate taste receptor cells (TRCs) on the tongue by cis-polyunsaturated acids in the mouth so that the taste of food is enhanced (Gilbertson et al., Col 9, lines 11-13) which is sensed through neuro epithelial cells as chemoreceptors in the mouth, the phenomenon is known as “body taste enhancement”.

Response to Argument

16. Applicants’ arguments and amendment filed 9/03/2010 have been considered but they are not persuasive. It is noted that Remacle et al., USPN 7572475 has been used to address amended claims 3 and 8 with respect to ‘egg- flavor’ and adding n-3 or n-6 long unsaturated double bond containing fatty acid in the composition.

17. Applicants argue on page 6, 19-25 that Gilbertson teaches about the experimental observation in ‘rat fungiform’ but no data to confirm that ‘people’ find the food more palatable. It is, however, to be noted that rats and people (i.e. human) both belong to mammalian system. Given that both rats and humans belong to mammalian system, it is clear that the results found using rats would be interpreted as representative to what would be found with humans. Further, there is nothing in the present claims that requires that the enhanced taste is limited to humans.

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18. Applicants argue on page 6 last two lines and page 7, 1st paragraph that Gilbertson discloses sensual features like texture, flavor, odor, and taste but applicant alleges that experimental evidence has established only on 'taste'. Firstly, the claim has claimed limitation 'taste' and secondly, taste related enhancement by the PUFAs does not antagonistically act on other features as mentioned.

19. Applicants argue on page 7, paragraphs 3, 4, and page 9, paragraph 2, that the applicants invention includes natural vegetable oils which contain additionally saturated fatty acids in contrast to Gilbertson who discloses that preferred effect is achieved without simultaneously adding a substantial amount of any saturated fatty acid (Gilbertson et al., col 2, lines 60-62). It is, however, to be noted that Gilbertson has disclosed that the causative agent is cis PUFAs in order to maintain taste enhancement effect only adding the PUFAs in various low calorie (W/O saturated fat) fat or sugar substitute compositions (col 2, lines 59-60). Further, with respect to Higashiyama, it is significant to note that Gilbertson is only used as an evidence reference as further evidence that Higashiyama meets the present claims. Given that Higashiyama discloses method identical to that presently claimed, it is clear that such method would inherently necessarily have to result in enhanced taste and flavor as claimed.

20. Applicants argue on page 8, last two paragraphs that the combination of Chen and Gilbertson would not have a reasonable expectation of success. However, Gilbertson has demonstrated the effect of e.g. arachidonic acid on enhancement of

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palatability of food and the stimulatory effect persists in presence or absence of other fatty acids in the composition (Gilbert col 2, lines 55-62).

21. Applicants also argue that the combination of Chen and Gilbertson is based on hindsight (page 9, paragraph 3).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning the communication or earlier communications from the examiner should be directed to Bhaskar Mukhopadhyay whose telephone number is (571)-270-1139.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)-272- 1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

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Patent Examiner, Art Unit 1789

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